

PTO/SB/61 (11-03)

Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNAVOIDABLY UNDER 37 CFR 1.137(a)		Docket Number (Optional) JP919990272US1
First Named Inventor: Rajendra Kumar Bera	Art Unit: 2124	RECEIVED CENTRAL FAX CENTER MAR 01 2004
Application Number: 09/597,478	Examiner: Chat C. Do	
Filed: 06/20/2000		
Title: Determining the Equivalence of Two Sets of Simultaneous Linear Algebraic Functions		
Attention: Office of Petitions Mail Stop Petition Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450		
NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (703) 305-9382.		
The above-identified application became abandoned for failure to file a timely and proper reply to a notice or action by the United States Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the Office notice or action plus any extensions of time actually obtained.		
APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION. NOTE: A grantable petition requires the following items: (1) Petition fee. (2) Reply and/or issue fee. (3) Terminal disclaimer with disclaimer fee required for all utility and plant applications filed before June 8, 1995, and for all design applications; and (4) Adequate showing of the cause of unavoidable delay.		
1. Petition fee <input type="checkbox"/> Small entity - fee \$ _____ (37 CFR 1.17(l)). Applicant claims small entity status. See 37 CFR 1.27. <input checked="" type="checkbox"/> Other than small entity - fee \$ 110.00 (37 CFR 1.17(l)).		
2. Reply and/or fee A. The reply and/or fee to the above-noted Office action in the form of Amendment A faxed to USPTO on 7/24/03 (identify the type of reply): <input checked="" type="checkbox"/> has been filed previously on July 24, 2003/July 28, 2003 and <input checked="" type="checkbox"/> is enclosed herewith. B. The issue fee of \$ _____ <input type="checkbox"/> has been filed previously on _____ <input type="checkbox"/> is enclosed herewith.		

[Page 1 of 3]

This collection of information is required by 37 CFR 1.137(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/61 (11-03)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED
UNAVOIDABLY UNDER 37 CFR 1.137(a)****3. Terminal disclaimer with disclaimer fee**

- ☒ Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.
- ☐ A terminal disclaimer (and disclaimer fee (37 CFR 1.20(d)) of \$ _____ for a small entity or \$ _____ for other than a small entity) disclaiming the required period of time is enclosed herewith (see PTO/SB/63).

4. An adequate showing of the cause of the delay, and that the entire delay in filing the required reply from the due date for the reply until the filing of a grantable petition under 37 CFR 1.137(a) was unavoidable, is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

3/1/2004
Date

Anthony V.S. England
Signature

512-477-7165

Telephone Number

Anthony V.S. England

Typed or printed name

35,129

Registration Number, if applicable

1717 West Sixth St., Suite 230

Address

Austin, TX 78703

Address

Enclosure ☒ Fee Payment

☐ Reply

☐ Terminal Disclaimer Form

☐ Additional sheets containing statements establishing unavoidable delay

☒ **Notice of Abandonment, dated 2/10/02 (2 pages), Exhibit "AA", copy of transmittal sent to USPTO 07/24/03 (18 pages), Exhibit "BB", copy of transmittal sent to USPTO 07/28/03 (4 pages)**

I hereby certify that this correspondence is being:

☐ deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to **Mail Stop Petition**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

☒ transmitted by facsimile on the date shown below to the United States Patent and Trademark Office at (703) 872-9306.

3/1/2004
Date

Anthony V.S. England
Signature

Anthony V.S. England

Typed or printed name of person signing certificate

(Page 2 of 3)

PTO/SB/01 (11-03)

Approved for use through 07/31/2006. OMB 0851-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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**PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED
UNAVOIDABLY UNDER 37 CFR 1.137(a)**

NOTE: The following showing of the cause of unavoidable delay must be signed by all applicants or by any other party who is presenting statements concerning the cause of delay.

3/1/2004

Date

35,129

Registration Number, if applicable

Anthony V.S. England

Signature

Anthony V.S. England

Typed or printed name

(In the space provided below, please explain in detail the reasons for the delay in filing a proper reply.)

Enclosed is a Notice of Abandonment dated February 10, 2004, which is based on the contention that Applicant did not timely reply to an Office action mailed by the USPTO on April 3, 2003. I am the current corresponding Attorney in the subject case. I respectfully disagree with this contention and hereby request that the holding of abandonment be withdrawn. Following is evidence showing that Applicant did, in fact, timely file a reply to the subject Office action.

Evidence showing that Applicant timely filed a reply:

1. On July 24, 2003, I sent a reply to the April 3, 2003, Office action by facsimile transmission. A copy of this transmittal, including USPTO acknowledgment of receipt by return facsimile report and my own facsimile machine's report of transmission, is enclosed as Exhibit "AA."
2. On July 28, 2003, I sent a Petition for Extension of Time for Reply, including authorization to charge IBM Corporation deposit account for the one month extension fee, also by facsimile transmission. A copy of this transmittal, including USPTO acknowledgment of receipt by return facsimile report and my own facsimile machine's report of transmission, is enclosed as Exhibit "BB."

Applicant herein encloses Fee Transmittal (PTO/SB/17) authorizing charging of the petition fee to a deposit account. However, Applicant requests that no fee be charged since Applicant has provided evidence herein that a proper reply petition for extension of time, and payment for extension of time, were timely submitted.

Respectfully submitted,

By Anthony V.S. England
Anthony V.S. England

Attorney of Record

Registration No. 35,129

Telephone: 512-477-7165

a@aengland.com

(Page 3 of 3)

PTO/SB/17 (10-03)

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FEE TRANSMITTAL
for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT**

(\$ 110.00)

Complete if Known

Application Number	09/597,478
Filing Date	06/20/2000
First Named Inventor	Rajendra Kumar Bera
Examiner Name	Chat C. Do
Art Unit	2124
Attorney Docket No.	JP919990272US1

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit
Account
Number
Deposit
Account
Name

09-0457

International Business Ma

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 0)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims		Extra Claims		Fee from below		Fee Paid	
Independent Claims		20** =		X			
Multiple Dependent		3** =		X			

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	88	2201	43	Independent claims in excess of 3	
1203	290	2203	145	Multiple dependent claim, if not paid	
1204	88	2204	43	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	
SUBTOTAL (2)					(\$ 0)

**or number previously paid, if greater. For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	60	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	\$110.00
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 110.00)**SUBMITTED BY**

Name (Print/Type)	Anthony V.S. England	Registration No. (Attorney/Agent)	35,129	Telephone	512-477-7165
Signature	<i>Anthony V.S. England</i>	Date	3-1-2004		

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,478	06/20/2000	Rakesh Kumar Bera	JP9-1999-0272US1	5293
7390 02/10/2004				
ANTHONY ENGLAND 1717 WEST SIXTH STREET SUITE 230 AUSTIN, TX 78703				
			EXAMINER DO, CHAT C	
			ART UNIT 2124	PAPER NUMBER 10

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Notice of Abandonment	Application No.	Applicant(s)	
	09/597,478	BERA, RAKEMDRA KUMAR	
	Examiner	Art Unit	
	Chat C. Do	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 03 April 2003.
 - (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) ☐ The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☒ The reason(s) below:

The examiner had called to notify the attorney of record, Anthony England, about this abandonment in 02/05/2004.

TODD INGBERG
PRIMARY EXAMINER

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

U.S. Patent and Trademark Office
PTOL-1432 (Rev. 04-01)

Notice of Abandonment

Part of Paper No. 8

PATENT
09/597,478

EXHIBIT "AA"

COPY OF TRANSMITTAL SENT TO USPTO

ON 7/24/2003, INCLUDING USPTO

FACSIMILE REPORT AND ATTORNEY'S

FACSIMILE REPORT

UNITED STATES
PATENT AND
TRADEMARK OFFICE

TO:

Fax Sender at 512 458 8536

Fax Information

7/24/03 4:34:58 PM [Eastern Daylight Time]
15 (including cover page)

Date Received:

Total Pages:

ADVISORY: This is an automatically generated return receipt confirmation of the facsimile transmission received by the Office. Please check to make sure that the number of pages listed as received in Total Pages above matches what was intended to be sent. Applicants are advised to retain this receipt in the unlikely event that proof of this facsimile transmission is necessary. Applicants are also advised to use the certificate of facsimile transmission procedures set forth in 37 CFR 1.8(a) and (b), 37 CFR 1.6(f). Trademark Applicants, also see the Trademark Manual of Examining Procedure (TMEP) section 306 et seq.

Received
Cover
Page

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[illegible]

03/01/2004 11:05

512-322-0211

ANTHONY ENGLAND

PAGE 09

TRANSMISSION VERIFICATION REPORT

TIME : 07/24/2003 14:39

DATE, TIME
FAX NO./NAME
DURATION
PAGE(S)
RESULT
MODE

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ECM

PTO/SB/21 (05-03)

Approved for use through 04/30/2003. OMB 0851-0031

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/597,478
	Filing Date	08/20/2000
	First Named Inventor	Bera
	Art Unit	2124
	Examiner Name	Chat C. Do
	Attorney Docket Number	JP919990272US1
Total Number of Pages in This Submission		15

ENCLOSURES (Check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply (13 pages) <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Applicant Initiated Interview Request (1 pg)
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Anthony V.S. England
Signature	<i>Anthony VS England</i>
Date	7-24-2003

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Typed or printed name	Anthony V.S. England		
Signature	<i>Anthony VS England</i>	Date	7-24-2003

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTOL-413A (05-03)
Approved for use through x0x/0x00x. DMIS 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Applicant Initiated Interview Request Form Atty Dkt JP919990272US1

Application No.: 09/597,478 First Named Applicant: Bera
Examiner: Chat C. Do Art Unit: 2124 Status of Application: 1st Office Ac'n

Tentative Participants:

(1) Chat C. Do (2) A. England
(3) _____ (4) _____

Proposed Date of Interview: 8/22/2003 Proposed Time: 11 a.m. (AM/PM)
Eastern

Type of Interview Requested:

(1) ☒ Telephonic (2) ☐ Personal (3) ☐ Video Conference

Exhibit To Be Shown or Demonstrated: ☐ YES ☒ NO

If yes, provide brief description: _____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rejection of claims 1 through 14 based on 35 USC 101			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Rejection of claims 1 through 14 based on USP 5,200,915			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Continuation Sheet Attached

Brief Description of Arguments to be Presented:

- 1.) Discuss amendments submitted to limit the claims to a practical application in the technological arts.
- 2.) Request that Ex. explain how the cited reference teaches eliminating unknowns until equations are in the claimed form which includes algebraic expressions (instead of real or integer numbers).

An interview was conducted on the above-identified application on _____.

NOTE:

This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

Anthony England
(Applicant/Applicant's Representative Signature)

(Examiner/SPE Signature)

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Docket JP919990272US1

Appl. No.: 09/597,478
Filed: June 20, 2000

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MAR 01 2004

In the United States Patent and Trademark Office

In re the application of: Bera)	
)	
Filed: 06/20/2000)	Group Art Unit: 2124
)	
For: Determining the Equivalence)	Examiner: Chat C. Do
of Two Sets of Simultaneous)	
Linear Algebraic Equations)	
)	
Appl. No.: 09/597,478)	
)	
Applicant's Docket:)	
JP919990272US1)	

Handwritten:
#8/a
A.E.
J. C. Do
6-3-04

AMENDMENT A

The following amendment is responsive to Examiner's Office Action, having a mailing date of April 3, 2003.

Docket JP919990272US1

Appl. No.: 09/597,478
Filed: June 20, 2000IN THE CLAIMS

Set out immediately below is a set of all pending claims with markings to show any amendments submitted herein. Please enter the claims, as amended.

1. (currently amended) A computer implemented method in a simulation of a physical system, wherein the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations, the method being for determining the equivalence of the first and a second sets of simultaneous linear algebraic equations, each of said equations being of a form:

$$e_{i1}x_1 + e_{i2}x_2 + e_{i3}x_3 + \dots + e_{in}x_n = b_i$$

wherein x_i are unknowns, e_{ij} are coefficients, and b_i are quantities, said coefficients and quantities being known algebraic expressions, said method comprising the steps of:

iteratively eliminating said unknowns from each of said sets of simultaneous linear algebraic equations until each of said equations are in a the form:

$$(l_i)_k x_i = (r_i)_k$$

wherein l_i and r_i are algebraic expressions, and $k=\{1;2\}$ indicate one of said sets that said equation is derived from; and

comparing, for each of said unknowns, the a products $(l_i)_1*(r_i)_2$ and a product $(l_i)_2*(r_i)_1$, wherein said first and said second set of simultaneous linear algebraic equations are equivalent if said products match for all said unknowns.

Docket JP919990272US1

Appl. No.: 09/597,478

Filed: June 20, 2000

2. (Previously presented) The computer implemented method according to claim 1, said method further including the initial steps of:

recasting said algebraic expressions into a form of one or more token pairs arranged sequentially in a string, each said token pair comprising an operator followed by an operand; and

reducing said strings in accordance with a set of predetermined simplifying rules to obtain reduced expressions; and

wherein said eliminating step is performed on said reduced strings in accordance with a set of predetermined operations.

3. (Previously presented) The method according to claim 2, wherein said simplifying rules comprise performing the steps of:

arranging the token pairs into subgroups;

arranging the operand tokens in such a ~~an~~ arranged subgroup in a certain order, thereby producing ordered operands;

reducing the ordered operands by consolidating one or more constants and eliminating variables of opposite effect to form reduced subgroups; and

consolidating one or more multiple instances of similar subgroups, to produce a reduced string.

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4. (currently amended) A computational apparatus for use in simulating a physical system, wherein the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations, wherein the apparatus is for determining the equivalence of the first and a second sets of simultaneous linear algebraic equations, each of said equations being in the form:

$$e_{i1}x_1 + e_{i2}x_2 + e_{i3}x_3 + \dots + e_{in}x_n = b_i$$

wherein x_i are unknowns, e_{ij} are coefficients, and b_i are quantities, said coefficients and quantities being known algebraic expressions, said apparatus comprising:

means for iteratively eliminating said unknowns from each of said sets of simultaneous linear algebraic equations until each of said equations are in the form:

$$(l_{ij})_k x_i = (r_i)_k$$

wherein l_{ij} and r_i are algebraic expressions, and $k=\{1;2\}$ indicate one of said sets that said equation is derived from; and

means for comparing, for each of said unknowns, the products $(l_{ii})_1 * (r_i)_2$ and a product $(l_{ii})_2 * (r_i)_1$, wherein said first and said second set of simultaneous linear algebraic equations are equivalent if said products match for all said unknowns.

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5. (Previously presented) The computational apparatus according to claim 4, said apparatus further including:

means for recasting said algebraic expressions into a form of one or more token pairs arranged sequentially in a string, each said token pair comprising an operator followed by an operand; and

means for reducing said strings in accordance with a set of predetermined simplifying rules to obtain reduced expressions; and

wherein said means for eliminating operates on said reduced strings in accordance with a set of predetermined operations.

6. (Previously presented) The apparatus according to claim 5, wherein said eliminating means performs the predetermined operations of:

arranging the token pairs into subgroups;

arranging the operand tokens in such a an arranged-subgroup in a certain order, thereby producing ordered operands;

reducing the ordered operands by consolidating one or more constants and eliminating variables of opposite effect to form reduced subgroups; and

consolidating one or more multiple instances of similar subgroups, to produce a reduced string.

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7. (currently amended) A computer program product carried by a storage medium, the computer program product being for use in a simulation of a physical system, wherein the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations, wherein the computer program product is for determining ~~an~~the equivalence of ~~thea~~ first and a second sets of simultaneous linear algebraic equations, each of said equations being of a form:

$$e_{i1}x_1 + e_{i2}x_2 + e_{i3}x_3 + \dots + e_{in}x_n = b_i$$

wherein x_j are unknowns, e_{ij} are coefficients, and b_i are quantities, said coefficients and quantities being known algebraic expressions, said computer program product comprising:

a program element for iteratively eliminating said unknowns from each of said sets of simultaneous linear algebraic equations until each of said equations are in the form:

$$(l_{ii})_k x_i = (r_i)_k$$

wherein l_{ii} and r_i are algebraic expressions, and $k=\{1;2\}$ indicate one of said sets that said equation is derived from; and

a program element for comparing, for each of said unknowns, the products $(l_{ii})_1 * (r_i)_2$ and a product $(l_{ii})_2 * (r_i)_1$, wherein said first and said second set of simultaneous linear algebraic equations are equivalent if said products match for all said unknowns.

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8. (Previously presented) The computer program of claim 7 further comprising:

a program element for recasting said algebraic expressions into a form of one or more token pairs arranged sequentially in a string, each said token pair comprising an operator followed by an operand; and

a program element for reducing said strings in accordance with a set of predetermined simplifying rules to obtain reduced expressions; and

wherein said program element for eliminating operates on said reduced strings in accordance with a set of predetermined operations.

9. (Previously presented) The computer program of claim 8 wherein said program element for eliminating performs the predetermined operations of:

arranging the token pairs into subgroups;

arranging the operand tokens in such a an arranged subgroup in a certain order, thereby producing ordered operands;

reducing the ordered operands by consolidating one or more constants and eliminating variables of opposite effect to form reduced subgroups; and

consolidating one or more multiple instances of similar subgroups, to produce a reduced string.

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10. (currently amended) A computer implemented method in a simulation of a physical system, wherein the system is described by a first set of simultaneous linear algebraic equations (SLAEs) and is simulated by a second system described by a second set of SLAEs, the method being for determining ~~an~~ the equivalence of the first and second sets of simultaneous linear algebraic equations (SLAEs), each said set comprising two or more algebraic equations, said method comprising the steps of:

- reducing each SLAE to a standard form; and
- comparing the SLAEs to determine whether equivalence exists.

a1 11. (Previously presented) The method of claim 10, wherein said reducing step includes the steps of:

- converting each SLAE into a reduced form;
- performing an elimination process; and
- performing a back substitution process generating a two part string array form for each SLAE.

12. (Previously presented) The method of claim 10, wherein said comparing step includes the steps of:

- forming a product of a part of a string array with a part of another said string array;
- forming a product of the other part of a string array with the other part of said another string array; and
- comparing said respective products for mathematical equivalence.

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13. (Previously presented) The method of claim 12, wherein, for ~~at~~ the case of three or more sets, said comparing step is repeated for combinations of pairs of the ~~total number of~~ sets.

14. (currently amended) A computer implemented method in a simulation of a physical system, wherein the system is described by a first set of simultaneous linear algebraic equations (SLAEs) and is simulated by a second system described by a second set of SLAEs, the method being for ~~of determining the~~ equivalence of ~~thea~~ first and a second sets of ~~simultaneous linear algebraic equations (SLAEs)~~, said method comprising the steps of:

iteratively eliminating unknowns from each of said sets of SLAEs to place each SLAE in a two-part standard form; and

forming a product of a part of one said standard form equation with a part of another part of another said standard form equation;

forming a product of the other part of said standard form equation with the other part of said another standard form equation; and

comparing said respective products for mathematical equivalence.

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Claims 1 through 14 stand rejected under 35 USC 112, second paragraph, as being indefinite. Amendments are submitted above to overcome these rejections, as will be further described herein below.

Claims 1 through 14 stand rejected under 35 USC 101 as being directed to non-statutory subject matter. Amendments are submitted above to overcome these rejections, as will be further described herein below.

Claims 1 through 14 stand rejected under 35 USC 103(a) as being obvious with respect to Press et al. in view of Hayami et al. Remarks are submitted herein below to traverse these rejections.

Response to rejections under 35 USC 112, second paragraph.

Applicant herein submits amendments in accordance with Examiner's observations regarding indefiniteness, except regarding claims 3, 6 and 9, as follows.

Applicant asserts regarding claims 3, 6 and 9 that the result of "arranging operand tokens in an arranged subgroup in order" is to produce the "ordered operands" referred to subsequently. To make this more clear, "arranging operand tokens in an arranged subgroup in order" is amended above to state "... in a certain order, thereby producing ordered operands."

Examiner made no objection to the following in claims 3, 6 and 9, however, to make clear that the "token pairs" and "operand tokens" are referred to in the respective immediately preceding claims, Applicant herein submits amendments to state "the token pairs" and "the operand tokens." Also, the reference to "an arranged subgroup" is amended to merely "such a

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subgroup" to make clear that the subgroup is referred to in the immediately preceding "arranging the token pairs into subgroups."

Response to rejections under 35 USC 101.

To overcome the rejection regarding claiming non-statutory subject matter the independent claims are amended herein above to state that "in a simulation of a physical system, . . . the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations." The claimed invention involves "determining an equivalence of the first and second sets of simultaneous linear algebraic equations."

Language merely clarifying that which is inherent to what is stated in the specification is not new matter. MPEP 2163.07 (a). Simulation, by its inherent nature, concerns a mathematical description of a physical system. The specification states that the invention is directed to applications including simulations. Page 1, lines 14 and 15 ("Such applications include engineering and simulation computer codes.") The description of the system disclosed in the present application is by simultaneous linear algebraic equations. Page 6, lines 6 through 14. Therefore, no new matter is added by the addition to the independent claims that the invention is limited to a method, apparatus, etc., "in a simulation of a physical system, . . . the system is described by a first set of simultaneous linear algebraic equations and is simulated by a second system described by a second set of simultaneous linear algebraic equations."

Claims limited to a practical application in the technological arts are drawn to statutory subject matter. MPEP 2106 IV B 2 (b) ii). With the addition of the above described limitation,

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the invention is indeed limited to such a practical application, and Applicant contends that the amendments have overcome the rejection under 35 USC 101.

Response to rejections under 35 USC 103(a).

The present invention provides a useful solution to a problem that arises when simulating physical systems that are described by algebraic equations, more particularly simultaneous linear algebraic equations ("SLAE's"). That is, when dealing with the algebraic expressions describing physical systems, prior to the present invention it has problematically not always been possible to determine a factor common among the expressions so that the common factor can be eliminated. This makes it difficult to determine equivalence of two SLAE's. Page 1, lines 17 through 19.

The patents cited in the Office Action deal with the solution of linear algebraic equations. However, in the cited patents the coefficient matrices of the equations have elements that are all numbers. None of the cited patents allow even one element in a coefficient matrix to be algebraic. In contrast, according to the present invention, as claimed, unknowns are iteratively eliminated from the sets of SLAE's until each is in a form:

$$(l_{ij})_k x_i = (r_i)_k$$

"wherein l_{ij} and r_i are *algebraic expressions*." Claim 1. This elimination requires no division operation between two algebraic expressions, which advantageously avoids numerical instability problems. Page 6, line 30 through page 11, line 24; Page 11, lines 23 and 24 ("Note the absence of any division in the entire process [described above].").

Hayami et al. (patent number US 5,200,915), like the other patents cited in the Office Action, deals solely with numbers instead of algebraic expressions in its coefficient matrix,

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which is a symmetric matrix. Col. 5, lines 9 through 13. Furthermore, Hayami et al. focus on exploiting properties of a *symmetric* matrix for a single SLAE. Page 4, lines 7 through 49.

PRIOR ART OF RECORD

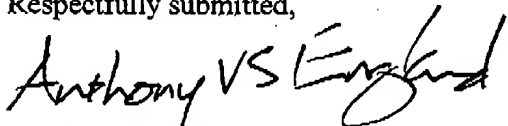
Applicants have reviewed the prior art of record cited by but not relied upon by Examiner, and assert that the invention is patentably distinct.

REQUESTED ACTION

Applicants contend that the invention as claimed in accordance with amendments submitted herein is patentably distinct, and hereby request that Examiner grant allowance and prompt passage of the application to issuance.

Accompanying this Response is an Applicant Initiated Interview Request Form, requesting an telephone interview with Examiner on August 22, at 11 am Eastern time to discuss the case. Examiner may call or send Attorney an e-mail if the proposed time for the telephone call is not convenient.

Respectfully submitted,



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Attorney for Applicants
Registration No. 35,129
512-477-7165
a@aengland.com

PATENT
09/597,478

EXHIBIT "BB"

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Page 001

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07/28/2003 17:31	512-458-8536	ANTHONY ENGLAND	PAGE 01
Docket IP919990272US1		Appl. No.: 09/597,478 Filed: June 20, 2000	
In the United States Patent and Trademark Office			
In re the application of: Bera)		
Filed: 06/20/2000)	Group Art Unit: 2124	
For: Determining the Equivalence)	Examiner: Chet C. Do	
of Two Sets of Simultaneous)		
Linear Algebraic Equations)		
Appl. No.: 09/597,478)		
Applicant's Docket:)		
IP919990272US1)		
<p>CERTIFICATE OF Facsimile Transmission I hereby certify that this correspondence is being transmitted via facsimile to USPTO Group Art Unit 2124 at telephone number 703-748-9236 and to the attention of Examiner Chet C. Do on <u>July 28, 2003</u> <u>Anthony V. England</u> Date <u>7/28/03</u> Signature of: <u>Anthony V. England</u> Title</p>			
PETITION FOR EXTENSION OF TIME FOR REPLY			
<p>A formal written reply (the "Reply") was filed in the PTO by facsimile transmission on July 24, 2003, responsive to an Office action dated April 3, 2003 (the "Office Action") in the subject application.</p>			
<p>The applicant hereby petitions the Commissioner Of Patents And Trademarks to extend the time for reply to the Office Action from July 3, 2003, to August 3, 2003, that is, an extension of one month. Please charge deposit account number 50-0629, in the amount of \$110.00 to cover the cost of the extension. Any deficiency or overpayment should be charged or credited to the above numbered deposit account.</p>			
<p>Accordingly, the applicant also requests that the earlier filed Reply be entered.</p>			
<p>Respectfully submitted, <u>Anthony V. S. England</u> Anthony V. S. England Attorney for Applicant Registration No. 35,129 512-477-7165 a@england.com</p>			
<p>Received from <512 458 8536> on 7/28/03 7:27:09 PM [Eastern Daylight Time]</p>			

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512-322-0211

ANTHONY ENGLAND

PAGE 27

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Appl. No.: 09/597,478

Filed: June 20, 2000

In the United States Patent and Trademark Office

In re the application of: Bera)
 Filed: 06/20/2000) Group Art Unit: 2124
 For: Determining the Equivalence) Examiner: Chat C. Do
 of Two Sets of Simultaneous)
 Linear Algebraic Equations)
 Appl. No.: 09/597,478)
 Applicant's Docket:)
 JP919990272US1)

#13
 P. C. Ho
 6-7-04

CERTIFICATE OF Facsimile Transmission

I hereby certify that this correspondence is being transmitted via facsimile to USPTO Group Art Unit 2124 at telephone number 703-746-7239 and to the attention of Examiner Chat C. Do on July 28, 2003.

Susan M. Maze
 Susan M. Maze

7/28/03
 Date

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Accordingly, the applicant also requests that the earlier filed Reply be entered.

Respectfully submitted,

Anthony V S England

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